AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently amended): A membrane interface probe apparatus comprising:

a membrane interface probe (MIP) ~~sensor~~ housing having a ~~larger~~ diameter ~~than a conventional MIP sensor~~ of at least about 2.125 inches.

Claim 2 (Currently amended): The MIP apparatus according to claim 1 wherein said ~~larger diameter~~ MIP ~~sensor~~ housing is adapted ~~for direct coupling~~ to couple ~~to larger diameter~~ with a rod ~~systems~~ system.

Claim 3 (Currently amended): The MIP apparatus according to claim 1 wherein said ~~larger diameter~~ MIP ~~sensor~~ housing ~~allows use of said MIP sensor~~ is adapted to be coupled with ~~larger capacity~~ push and hammer systems.

Claim 4 (Currently amended): The MIP apparatus according to claim 1 wherein said ~~larger diameter~~ MIP ~~sensor~~ housing ~~allows use in situations where~~ is adapted for ~~a~~ low sidewall support ~~of the~~ drive rod string ~~exists~~ applications.

Claim 5 (Currently amended): The MIP apparatus according to claim 1, wherein said ~~larger diameter~~ MIP ~~sensor~~ housing ~~is adapted to include~~ comprises two or more permeable membranes.

Claim 6 (Currently amended): A membrane interface probe apparatus comprising at least one of:

a membrane interface probe (MIP) ~~sensor~~ housing having two or more permeable membranes; and/or

a membrane interface probe (MIP) adapted to provide circumferential sensing.

Claim 7 (Currently amended): The MIP ~~sensor~~ housing of claim 6, wherein said two or more permeable membranes are arranged equidistant about a circumference of said MIP ~~sensor~~ housing.

Claim 8 (Currently amended): The MIP ~~sensor~~ housing of claim 7, wherein said MIP ~~sensor~~ housing is operative ~~to improve circumferential sensing and~~ to increase likelihood of collection of volatile organic mass ~~by said MIP sensor~~.

Claim 9 (Currently amended): A membrane interface probe apparatus comprising:

a membrane interface probe (MIP) ~~sensor~~ comprising at least one of ~~adapted to improve watertight integrity by including undersea cabling~~ a waterproof electrical coupling ~~couplings~~ and/or an O-ring mechanical ~~couplings~~ coupling, wherein at least one of said waterproof electrical coupling and/or said O-ring mechanical coupling improve watertight integrity.

Claim 10 (Currently amended): A modular membrane interface probe (MIP) apparatus comprising:

a modular membrane interface probe (MIP) ~~sensor constructed from~~ comprising a plurality of modular components allowing field serviceable replacement of any malfunctioning components of said plurality of modular components.

Claim 11 (Currently amended): The modular MIP apparatus according to claim 10, comprising at least one of:

an external barrel having a cavity; and/or

an inner core barrel assembly field-insertable into said cavity having a heater cavity, wherein said heater cavity is adapted to receive a field-insertable removable cartridge heating element.

Claim 12 (Original): The modular MIP of claim 10, wherein said modular MIP apparatus comprises a removable conductivity nose assembly.

Claim 13 (Original): The modular MIP of claim 10, wherein said modular MIP apparatus comprises a field-insertable removable cartridge heating element.

Claim 14 (Currently amended): The modular MIP of claim 10, wherein said modular MIP apparatus comprises at least one of a waterproof electrical connector and/or an O-ring seal.

Claim 15 (Currently amended): A membrane interface probe apparatus comprising:

a membrane interface probe (MIP) ~~sensor~~ comprising ~~a~~ an internal removable trap ~~directly into the probe for the collection~~ adapted to collect and/or concentrate ~~concentration of~~ one or more volatile organic compounds.

Claim 16 (Currently amended): The MIP apparatus according to claim 15, wherein said removable trap is adapted to ~~enables detection of lower levels of~~ detect concentration levels of said one or more volatile organic ~~compound~~ compounds, and ~~specific identification of~~ to specifically identify said compounds through ~~post run~~ chromatographic analysis.

Claim 17 (Currently amended): The MIP apparatus according to claim 15, further comprising: ~~providing for~~ a calibrator ~~calibration of~~ adapted to calibrate said MIP ~~sensor~~ using chromatographic methods.

Claim 18 (Currently amended): The MIP apparatus according to claim 15, further comprising means for at least one of ~~simultaneous~~ trapping and/or concentrating of volatile organic compounds during MIP sampling and logging events.

Claim 19 (Currently amended): A membrane interface probe apparatus comprising:

a membrane interface probe (MIP) ~~sensor~~ comprising a heated transfer line from a body of said MIP ~~sensor~~ to a surface detector suite ~~minimizing~~ adapted to minimize loss of volatile organic compounds in a cold transfer line.

Claim 20 (Currently amended): A membrane interface probe ~~apparatus~~ system comprising:

a membrane interface probe (MIP); ~~sensor comprising~~

an enhanced scanning solutions ~~module,~~ module operatively coupled to said MIP; and

a sample introduction system coupled to said MIP adapted to ~~reduce overall equipment footprint and cost; to~~ introduce calibration ~~gases;~~ gas and to allow for simultaneous sampling of a volatile organic gas stream for ~~immediate~~ chromatographic analysis.

Claim 21 (Currently amended): A membrane interface probe ~~apparatus~~ system comprising:

a membrane interface probe (MIP) adapted to gather data; ~~sensor comprising~~

a global positioning system (GPS) receiver adapted to identify a location of said MIP; ~~integrated with~~

a data acquisition system adapted to ~~allow simultaneous geo-referencing~~ geo-reference ~~of sampling points with sample~~ said data with said location.

Claim 22 (Original): A membrane interface probe system comprising:

a membrane interface probe (MIP) sensor comprising a mobile device in wireless communication with a data acquisition system enabling near real-time transfer of data from said MIP sensor to a base station.

Claim 23 (Currently amended): The MIP system of claim 22, wherein said mobile device comprises a graphical display and a control module adapted to operate said data acquisition system operation.

Claim 24 (Original): The MIP system of claim 22, wherein said mobile device is portable.

Claim 25 (Currently amended): The membrane interface probe ~~apparatus~~ system of claim 20, wherein the enhanced scanning solutions module further comprises:

a flow control subsystem;

a detector subsystem coupled to said flow control subsystem;

a dryer/moisture separator subsystem coupled to said flow control subsystem;

a sampling subsystem coupled to said flow control subsystem; and

a software control subsystem coupled to at least one of said flow control subsystem, said detector subsystem, said dryer/moisture separator subsystem, and/or said sampling subsystem.

Claim 26 (Currently amended): The membrane interface probe ~~apparatus~~ system of claim 25, wherein said sampling subsystem of the enhanced scanning solutions module comprises at least one of:

a sample loop;

an absorbent trap; and/or

a gas chromatography injection port.

Claim 27 (Currently amended): The membrane interface probe ~~apparatus~~ system of claim 25, wherein the enhanced scanning solutions module further comprises at least one of:

an exhaust;

a pneumatic supply;

a power supply;

a bypass module;

a feedback signal; and/or

a pressure control subsystem.

Claim 28 (Currently amended): The membrane interface probe ~~apparatus~~ system of claim 20, wherein the enhanced scanning solutions module further comprises:

a detector subsystem;

a sampling subsystem; and

a software control subsystem coupled to said detector subsystem, and said sampling subsystem.

Claim 29 (Currently amended): The membrane interface probe ~~apparatus~~ system of claim 28, wherein the enhanced scanning solutions module further comprises:

a dryer/moisture separator subsystem coupled to said software control subsystem.

Claim 30 (Currently amended): The membrane interface probe ~~apparatus~~ system of claim 28, wherein said sampling subsystem of the enhanced scanning solutions module comprises at least one of:

a sample loop;

an absorbent trap; and/or

a gas chromatography injection port.

Claim 31 (Currently amended): The membrane interface probe ~~apparatus~~ system of claim 28, wherein the enhanced scanning solutions module further comprises at least one of:

an exhaust;

a pneumatic supply;

a power supply;

a bypass module;

a feedback signal; and/or

a pressure control subsystem.

Claim 32 (Previously Presented): The membrane interface probe ~~apparatus~~ system of claim 28, wherein said enhanced scanning solutions module comprises on-the-fly reconfigurability, and further comprises:

a plurality of operator-selectable modes.

Claim 33 (Previously Presented): The membrane interface probe ~~apparatus~~ system of claim 28, wherein said enhanced scanning solutions module further comprises:

a plurality of pre-programmable operating modes that interactively reconfigures to perform any of a plurality of functions, subject to particular conditions.

Claim 34 (Currently amended): The membrane interface probe ~~apparatus~~ system of claim 28, wherein said enhanced scanning solutions module further comprises:

an interface between said detector subsystem and a gas handling subsystem allowing insertion of at least one of: a sample, another detector, a flowpath, a flow path rate, a dryer, an exhaust, a feedback, and/or a trap.

Claim 35 (Currently amended): The membrane interface probe ~~apparatus~~ system of claim 28, wherein said software control subsystem of the enhanced scanning solutions module comprises at least one of:

a data logger;

a sequencer;

a valve control system;

a monitor;

a display; and/or

a recording function.